

Application No. 09/719,546
Amendment After Final Rejection dated July 31, 2003
Reply to Office Action of May 2, 2003

REMARKS

Status of Claims

Claims 1-35 were pending. Claim 9 has been amended. Claims 25 and 26 are cancelled. Thus, Claims 1-24 and 27-35 remain in prosecution.

Claim Objections

Claims 25 and 26 are objected to under 37 C.F.R. § 1.75(c) as being of improper dependent form. Claims 25 and 26 are hereby cancelled, thus obviating the objections.

Rejections under 35 U.S.C. § 103(a)

Claims 1-35 stand rejected under 35 U.S.C. § 103(a) as supposedly being unpatentable over the alleged admitted state of the art in view of Kerns et al. (U.S. Patent No. 3,529,320) and Schon (U.S. Patent No. 4,517,137).

The cancellation of Claims 25 and 26 renders the rejection to those claims moot. Applicant respectfully traverses the remaining claim rejections.

As the Examiner is aware, the invention defined by Claim 1 is directed to an impregnation process, steps of which comprise:

Application No. 09/719,546
Amendment After Final Rejection dated July 31, 2003
Reply to Office Action of May 2, 2003

a.) providing at least one mobile vessel in which impregnation of a porous article can be carried out, with the vessel including a chamber for containing a flowable polymerizable impregnating composition and at least one porous article to be impregnated;

b.) providing a series of stations defining a selection of impregnation sequences, with each of the stations performing at least one specific impregnation step on the at least one porous article within the at least one vessel, where the series of stations are selected from an impregnating composition addition station, a vacuum station, a pressure station, a centrifuge station, a reclaiming station, a retrieval station and combinations thereof;

c.) sequentially directing the at least one vessel to at least one selected station chosen from the series of stations;

d.) performing the at least one specific impregnation step at the at least one selected station; and

e.) providing a polymerization step to polymerize the impregnating composition within the pores of the porous article.

The cited documents of record neither disclose, teach, nor suggest Applicant's invention. Those documents are discussed in turn below.

Kerns et al. discloses a process and apparatus for encapsulating electrical conductors with a resinous material, such as epoxy resins. The article to be encapsulated is inserted into a mold which is then filled with a flowable resin. The resin is then cured to form a rigid molded shell around the conductor.

An encapsulant is used to protect the exterior of article which is encapsulated from environmental damage, or to provide a cosmetic difference to the surface of the article. In contrast, an impregnation sealant fills the pores of a porous article, thereby prevent leakage from that article. Since the porous are quite small, there is no cosmetic influence from the impregnation sealant.

Kerns et al. thus do not disclose, teach or even suggest either the process of or an apparatus for filling the pores of a porous article.

There is no motive to combine the teachings of Kerns et al. with the alleged admitted state of the art. The state of the art prior to the date of the present invention focused on processes related to the filling of pores within porous articles while Kerns et al. disclose processes directed at forming a protective/cosmetic shell around an object. Why would a

practitioner skilled in the art of filling the pores of porous substances consider the teachings of a disclosure directed at *encapsulating* an object? Since encapsulation completely transforms the shape of the object being encapsulated into a form determined by the mold, to submit the porous article, having a desired form, to such a process would result in an unacceptable product configuration that would be unsuited for its intended function.

Such an interpretation of the disclosure of Kerns et al. destroys the document for what it actually does teach, and thus renders it ineffective as a reference for citation against the pending claims.

Further, the resin system of Kerns et al. must be "castable" (col. 7, line 66). To achieve this result, epoxy resins systems are preferred and such resins systems require separation of the resin and its curing agent until just prior to application. If the epoxy system is mixed too soon before use, it will begin to polymerize resulting in premature gelation (col. 8, lines 9-31). It would have been counterintuitive for a practitioner skilled in the art of filling porous materials to even consider a resin system that adds significant complexity to their process.

Application No. 09/719,546

Amendment After Final Rejection dated July 31, 2003

Reply to Office Action of May 2, 2003

There is no incentive for one skilled in the art of processing porous materials to look to the teachings of Kerns et al. to improve such processes. The withdrawal of this ground of rejection is therefore respectfully requested.

With respect to the rejection based upon the alleged admitted state of the art in view of Schon, one skilled in the art of filling porous materials would not have been guided by the teaching of Schon to make Applicant's invention.

Schon's process and apparatus are designed to fill the holes of porous solid objects such as carbon or graphite electrodes with a filler material, described as "pitch" or "tar". Schon refers to "other filler materials" (col. 1, line 16), provided that they "carbonize" (convert to "coke") within the pores of the object upon heating (col. 7, lines 49-50). Therefore, in accordance with the teaching of Schon, "pitch" is not a polymerizable composition. Pitch is solidified, that is, "carbonized", by heating, which drives off low molecular weight volatiles via evaporation. In contrast, Applicant's invention uses a polymerizable composition to fill the porous voids. Polymerization occurs via a chemical reaction and not through evaporative means. The polymerizable compositions used in Applicant's invention do not "carbonize" when polymerized.

Application No. 09/719,546
Amendment After Final Rejection dated July 31, 2003
Reply to Office Action of May 2, 2003

The process of Schon requires a heating stage prior to impregnation in order to heat the porous material and the pitch to facilitate the impregnation of the pitch into the pores of a porous article. However, the use of a heating step prior to impregnation would partially or completely polymerize the impregnating composition, making it incapable of impregnating the pores. The impregnating composition would thus be rendered useless for its intended purpose. Therefore, the pre-impregnation heating step of Schon would defeat the functionality of an impregnation process using polymerizable compositions. As such, Schon teaches away from Applicant's claimed invention.

Schon's treatment process provides an electrode which is said to have as result increased current carrying capacity, improved shock resistance and increased elasticity. In contrast, Applicant's impregnation process fills the pores of a porous article with a polymerizable composition for the purpose of sealing against leaks. These disparate objectives would fail to lead one of ordinary skill in the art to Applicant's invention from a reading of Schon.

Application No. 09/719,546
Amendment After Final Rejection dated July 31, 2003
Reply to Office Action of May 2, 2003

CONCLUSION

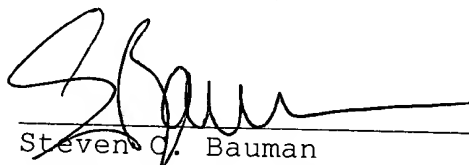
The alleged admitted state of the art in view of Kerns et al. and Schon does not render the Applicant's invention obvious.

The present paper is an earnest attempt at advancing prosecution on the merits, acceptance of which is believed to place the application in condition for allowance. Applicant therefore respectfully requests approval and entry of this paper, which is believed proper.

Prompt notification of the allowability of all pending claims is therefore earnestly solicited.

Applicant's undersigned attorney may be reached by telephone at (860) 571-5001, by facsimile at (860) 571-5028, or by email at steve.bauman@loctite.com. All correspondence should continue to be directed to the address given below.

Respectfully submitted,

✓ 
Steven C. Bauman
Attorney for Applicant
Registration No. 33,832

HENKEL LOCTITE CORPORATION
Legal Department
1001 Trout Brook Crossing
Rocky Hill, Connecticut 06067